

Table S1. COMPARE analysis of LamN

Rank	JCI#	Chemical name	Mode of action/Target	Exp.-ID	Pearson	P value
1	-99	SN-38	DNA topoisomerase I inhibitor	S05703	0.77	8.5E-09
2	-98	TAS-103 dihydrochloride	DNA topoisomerase I/II inhibitor	S06822	0.69	1.0E-06
3	-30	Camptothecin	DNA topoisomerase I inhibitor	S06512	0.68	2.2E-06
4	-15	Epirubicin hydrochloride	DNA topoisomerase II inhibitor	S02217	0.67	2.6E-06
5	-14	Doxorubicin hydrochloride	DNA topoisomerase II inhibitor	S01405	0.66	4.5E-06
6	-1453	IMD-0354	IKK-2 (IKK-beta) inhibitor	S06313	0.66	5.5E-06
7	-1558	TAS-102	Thymidylate synthase inhibitor Thymidine phosphorylase inhibitor	S06912	0.65	6.1E-06
8	-1213	Idarubicin hydrochloride	DNA topoisomerase II inhibitor	S06016	0.65	6.3E-06
9	-1111	Topotecan	DNA topoisomerase I inhibitor	S04803	0.65	6.9E-06
10	-86	Gemcitabine hydrochloride	Antimetabolite	S06821	0.65	8.2E-06
11	-13	Daunorubicin hydrochloride	DNA intercalator	S06504	0.65	9.3E-06
12	-1537	Gemcitabine	Antimetabolite	S06828	0.64	9.9E-06
13	-1	Carboquone	DNA alkylating agent	S03508	0.64	1.2E-05
14	-116	Aphidicolin	DNA polymerase α inhibitor	S06522	0.64	1.3E-05
15	-31	Irinotecan hydrochloride	DNA topoisomerase I inhibitor	S03302	0.63	1.6E-05
16	-1408	P276-00	CDK1/4/9 inhibitor	S06119	0.63	1.9E-05
17	-17	Etoposide	DNA topoisomerase II inhibitor	S02517	0.62	2.3E-05
18	-1538	Gemcitabine monophosphate	Antimetabolite	S06829	0.62	2.3E-05
19	-11	Actinomycin D	DNA-directed RNA polymerase inhibitor	S01704	0.60	4.8E-05
20	-33	Cisplatin	DNA alkylating agent	S04332	0.60	5.2E-05
21	-1015	Resveratrol	Polyphenol (multi-target)	S04345	0.60	5.7E-05
22	-777	SB 225002	CXCR2 antagonist	S03627	0.60	6.3E-05
23	-944	PI3K- α inhibitor IV	PI3K α inhibitor	S04029	0.60	6.5E-05
24	-12	Bleomycin hydrochloride	DNA damaging agent	S06705	0.59	6.7E-05
25	-26	Neocarzinostatin	DNA damaging agent	S02219	0.59	7.2E-05
26	-1524	Trabectedin	DNA damaging agent	S06714	0.59	8.4E-05
27	-69	Genistein	Isoflavone (multi-target)	S06520	0.58	1.2E-04
28	-91	Clofarabine	Antimetabolite	S01210	0.57	1.3E-04
29	-5	Cytarabine	Antimetabolite	S02521	0.57	1.6E-04
30	-28	Pirarubicin	DNA intercalator	S02220	0.57	1.7E-04

Table S2. COMPARE analysis of Lam3

Rank	JCI#	Chemical name	Mode of action/Target	Exp.-ID	Pearson	P value
1	-1540	Tetrahyrouridine	Cytidine deaminase inhibitor	S06831	0.66	4.8E-06
2	-1153	Lenalidomide	Immunomodulatory imide drug (IMiDs)	S04946	0.66	4.9E-06
3	-705	Warfarin	Anticoagulant	S03513	0.65	6.6E-06
4	-713	Oltipraz	Schistosomicide	S03521	0.65	6.7E-06
5	-703	Thalidomide(+)	Immunomodulatory imide drug (IMiDs)	S03511	0.65	8.5E-06
6	-285	SB203580	p38 MAPK Inhibitor	S01627	0.64	9.3E-06
7	-714	Theophylline	Phosphodiesterase III/IV Inhibitor	S03522	0.64	9.4E-06
8	-1527	CB 1954	DNA damaging agent	S06715	0.64	9.6E-06
9	-717	PP-H hydrochloride	Superoxide radical detector	S03525	0.64	1.1E-05
10	-710	N, N-diethyl-meta-toluamide	Insect repellent	S03518	0.64	1.3E-05
11	-679	Coenzyme Q10	Antioxidant	S03514	0.63	1.5E-05
12	-904	Rp-8-Br-PET-cGMPS, sodium salt	Protein Kinase G Inhibitor	S03955	0.63	1.8E-05
13	-846	Splitomicin	Inhibitor of class III HDACs (sirtuins)	S03828	0.63	1.8E-05
14	-1644	Trigonelline hydrochloride	Nicotinic acid metabolite (multi-target)	S07302	0.63	2.0E-05
15	-718	Dideoxyadenosine	Adenylate cyclase inhibitor Reverse transcriptase Inhibitor	S03526	0.62	2.1E-05
16	-1241	Jervine	Hedgehog (Hg) signaling inhibitor	S05402	0.62	2.4E-05
17	-395	Bortezomib	Proteasome inhibitor	S02412	0.62	2.6E-05
18	-1539	Pentostatin	Antimetabolite	S06830	0.62	2.6E-05
19	-896	L-NIL dihydrochloride	iNOS (inducible nitric oxide synthase-2) inhibitor	S03947	0.62	2.8E-05
20	-549	4-Ethylnitrobenzene	Unknown	S03046	0.61	3.4E-05
21	-1633	Indoximod	Indoleamine 2,3-dioxygenase 1 inhibitor	S07234	0.61	3.5E-05
22	-801	Monastrol	Kinesin-5 (Eg5) inhibitor	S03652	0.61	3.8E-05
24	-715	Sodium salicylate	Non-steroidal anti-inflammatory drug	S03523	0.61	4.3E-05
25	-516	TMPyP	Telomerase inhibitor	S03012	0.60	4.7E-05
26	-1652	Rac1 Inhibitor W56	Rac1 inhibitor	S07318	0.60	4.8E-05
27	-908	DL-AP3	Phosphoserine phosphatase inhibitor Metabotropic glutamate receptor antagonist	S03965	0.60	4.8E-05
28	-1713	Rbin-1	Midasin (Mdn1) inhibitor	S07452	0.60	5.0E-05
29	-14	Doxorubicin hydrochloride	DNA topoisomerase II Inhibitor	S01401	0.60	5.0E-05
30	-709	Pregnenolone-16 α -carbonitrile (PC)	PXR (Pregnane X receptor) ligand	S03517	0.60	5.3E-05
-	-99	SN-38	DNA topoisomerase I inhibitor	S05703	0.53	5.8E-04

Table S3. COMPARE analysis of Lam14

Rank	JCI#	Chemical name	Mode of action/Target	Exp.-ID	Pearson	P value
1	-1229	PHA 793887	CDK Inhibitor	S05216	0.65	7.2E-06
2	-1163	Danusertib	Aurora kinase inhibitor	S04956	0.62	3.1E-05
3	-774	Z-GLF-CMK	Cathepsin G inhibitor	S03624	0.61	4.5E-05
4	-1344	Alectinib	EML4-ALK inhibitor	S05807	0.60	5.5E-05
5	-1244	Quizartinib	FLT3 inhibitor	S05405	0.58	9.6E-05
6	-396	Chromomycin A3	Inhibitor of DNA replication and transcription	S02403	0.58	1.1E-04
7	-1266	PKI-587	PI3K/mTOR inhibitor	S05505	0.58	1.2E-04
8	-520	Epoxomicin	Proteasome inhibitor	S03016	0.57	1.4E-04
9	-1064	Kazusamycin A	Exportin1/CRM1 Inhibitor	S04810	0.57	1.5E-04
10	-1647	FIN56	GPX4 degrader	S07313	0.57	1.7E-04
11	-1248	AT-7519	CDK inhibitor	S07420	0.57	1.7E-04
12	-179	Dopamine hydrochloride	Neurotransmitter	S01326	0.56	2.2E-04
13	-835	Masoprocol	Antioxidant	S03817	0.55	2.5E-04
14	-1507	Olmutinib	EGFR inhibitor	S06643	0.55	2.5E-04
15	-876	Syk inhibitor	Spleen tyrosine kinase inhibitor	S03923	0.55	2.6E-04
16	-1408	P276-00	CDK inhibitor	S06119	0.55	3.3E-04
17	-1312	Apatinib	VEGFR2 inhibitor	S05526	0.54	3.5E-04
18	-318	Cadmium chloride	Carcinogen	S01724	0.54	3.9E-04
19	-1100	SNS-032	CDK inhibitor	S07416	0.54	4.4E-04
20	-736	Cyclopamine	Hedgehog (Hg) signaling inhibitor	S03545	0.54	4.4E-04
21	-814	Puromycin dihydrochloride	Transferase inhibitor	S03665	0.54	4.5E-04
22	-280	Tiapafant	Platelet-activating factor receptor antagonist	S01709	0.53	4.6E-04
23	-521	DRB	Casein kinase II (CK2) Inhibitor	S03017	0.53	4.7E-04
24	-1059	Chaetocin	Histone lysine methyltransferase inhibitor	S04805	0.53	5.2E-04
25	-881	TX-1918	eEF-2 kinase inhibitor	S03932	0.53	5.3E-04
26	-742	NSC23766	Rac-1 inhibitor	S03971	0.53	5.7E-04
27	-56	Herbimycin A	Pan protein kinase inhibitor Hsp90 inhibitor	S01105	0.53	5.9E-04
28	-1168	SNS-314	Aurora kinase inhibitor	S04961	0.52	6.0E-04
29	-640	Methyl 2,5-dihydroxycinnamate	EGFR inhibitor Erbstatin analogue	S03340	0.52	6.1E-04
30	-395	Bortezomib	Proteasome inhibitor	S02412	0.52	6.4E-04
-	-99	SN-38	DNA topoisomerase I inhibitor	S05703	0.23	1.6E-01